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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,264	10/04/2005	Kimiaki Tsutsui	273634US0PCT	1847
22850	7590	07/31/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER LISTVOYB, GREGORY	
			ART UNIT	PAPER NUMBER
			1796	
			NOTIFICATION DATE	DELIVERY MODE
			07/31/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/538,264	Applicant(s) TSUTSUI ET AL.	
	Examiner GREGORY LISTVOYB	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/08/2008 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

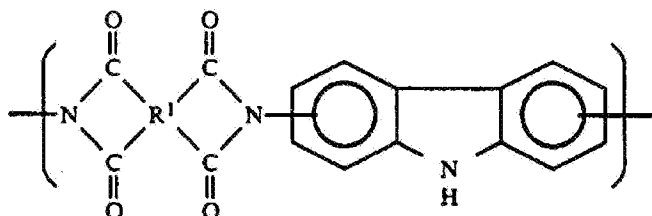
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4 and 5 are rejected under 35 U.S.C. 102(b) as anticipated by Kawada (US 5,158,619) herein Kawada ((necessitated by amendment)

Kawada teaches a polyimide obtained by cyclodehydration of a polyamic acid (dehydrating to cause ring closure, column 4, lines 60-63), obtained by reacting

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tetracarboxylic acid dianhydride with diaminocarbazole (column 4, lines 64-65) with the following formula:



where R1 can be represented by cyclopentane tetracarboxylic anhydride (meeting the limitations of Claim 4) or aromatic tetracarboxylic anhydride (meeting the limitations of claim 5) (see Table 1).

Therefore, the limitations of Claim 1 are met, since diaminocarbazole can constitute 100% of total diamine.

Since the polyimide structure of the Applicant and Kawada are identical, the physical properties (i.e. volume resistivity) of the above materials are inherently equal.

Since Kawada teaches the same structure as one of the Application, Kawada's conductive film can be used as a liquid crystal aligning agent.

Claim Rejections - 35 USC § 103

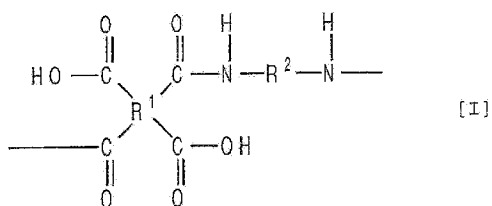
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-19 rejected under 35 U.S.C. 103 as being unpatentable over Sawahara et al (US 6294639) herein Sawahara in combination Kawada (necessitated by amendment).

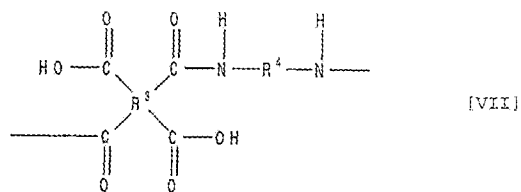
Sawahara discloses a liquid crystal aligning agent comprising a polyimide precursor having a structural unit represented by the formula (I) (see Abstract):



where R1 is a tetravalent organic group constituting a tetracarboxylic acid which has an alicyclic structure, meeting the limitations of Claim 4 (see Abstract) and R2 is a bivalent organic group constituting a diamine.

Sawahara teaches that R1 is bicyclo[3,3,0]octane-2,4,6,8-tetracarboxylic dianhydride (BODA) (see Example 1), which is the same material as uses in the Application.

In addition, Sawahara discloses a polyimide, having formula (VII):



where R3 is a tetravalent organic group constituting a tetracarboxylic acid, and R4 is a bivalent organic group constituting a diamine, such as one having repeating CH₂ groups in the structure (i.e. 1,2-diaminoethane, 1,3-diaminopropane, 1,4-diaminobutane and 1,6-diaminohexane, see Column 8, line 35)). In reference to Claim 8, Sawahara teaches 100% of aromatic diamine in the polyamide structure (see Example 1)

Sawahara teaches that polyamic acids of structures (I and VII) can be used together in preparation of a liquid crystal aligning agent (see Example 10).

Regarding Claim 5, 6 and 8-11 Sawahara teaches 10% -80% of alicyclic tetracarboxylic acid anhydride and aromatic tetracarboxylic acid dianhydride (i.e. pyromellitic, see Column 7, line 50). The advantage of having aromatic dianhydride in the polyimide structure is well known in the art. The addition of aromatics, for instance, among other advantages, increases Young modulus of the film and decreases water uptake.

Therefore, it would have been obvious to a person of ordinary skills in the art at the time of the invention was made to use reasonable amount of aromatic tetracarboxylic acid dianhydride (i.e. 20% mol or more) in order to increase Young modulus of the film and decreases water uptake.

Regarding claims 7 and 12-18, Sawahara teaches that his aligning film is used as a part of a liquid crystal display device (see Column 1, line 5). Hence, all variations of structures, disclosed above are aligning films used in liquid crystal display device.

Regarding newly presented claim 19, Sawahara teaches a first substrate, a second substrate, a spacer, where first and second substrates separated by spacer (see Example 31).

Sawahara does not teach that R₂ contains 10-100% of bivalent organic group having a nitrogen atom.

Kawada teaches a polyimide obtained by cyclodehydration of a polyamic acid (dehydrating to cause ring closure, column 4, lines 60-63), obtained by reacting one tetracarboxylic dianhydride with diaminocarbazole (column 4, lines 64-65).

Kawada teaches that his polyimide possesses high heat stability (see Table 1), which is important to liquid crystal alignment film.

Therefore, it would have been obvious to a person of ordinary skills in the art at the time of the invention was made that use such monomer as diaminodiphenylamine in range of 10-100% in Sawahara's polyimide precursor allows to prepare liquid crystal aligning agent with high heat stability.

Sawahara does not disclose volume resistivity values for his composition as it claimed in Claim 1.

However, he discloses a high voltage holding ratio (see Example 10), which depends on a polyamide structure and characterizes electrical resistance of the liquid crystal aligning agent. In Examiner's position, since Sawahara and the Applicant use polyamic acids of similar structure, Sawahara's composition as modified with Kawada, would have a volume resistivity values between $10E10$ to $10E14$ Ohm/cm.

Response to Arguments

Applicant's arguments with respect to claims 1 and 4-19 have been considered but are moot in view of the new ground(s) of rejection.

Cancellation of claims 2-3 is acknowledged.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY LISTVOYB whose telephone number is (571)272-6105. The examiner can normally be reached on 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/
Primary Examiner, Art Unit 1796

GL

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